

## Attachment D. Species Occurrence Predictions Derived from the U.S. Fish and Wildlife Service Lists

These data were prepared by U.S. Fish and Wildlife Service and delineate the potential species occurrence at or near the four proposed reservoir locations

Endangered and Threatened Avian Species Which May Occur in or be Affected by  
Projects in the Following Selected Quads  
Reference File No. 1-1-99-SP-64  
October 16, 1998

QUAD : 547A MANOR SLOUGH

American peregrine falcon, *Falco peregrinus anatum* (E)  
Aleutian Canada goose, *Branta canadensis leucopareia* (T)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
ferruginous hawk, *Buteo regalis* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 536A LOGAN RIDGE

American peregrine falcon, *Falco peregrinus anatum* (E)  
Aleutian Canada goose, *Branta canadensis leucopareia* (T)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
ferruginous hawk, *Buteo regalis* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 563B RAIL CANYON

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
ferruginous hawk, *Buteo regalis* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 563C LADOGA

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 563D SITES

American peregrine falcon, *Falco peregrinus anatum* (E)  
Aleutian Canada goose, *Branta canadensis leucopareia* (T)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
ferruginous hawk, *Buteo regalis* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 579C FRUTO

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
ferruginous hawk, *Buteo regalis* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 579D STONE VALLEY

American peregrine falcon, *Falco peregrinus anatum* (E)  
Aleutian Canada goose, *Branta canadensis leucopareia* (T)  
bald eagle, *Haliaeetus leucocephalus* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
ferruginous hawk, *Buteo regalis* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 580A CHROME

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 596D NEWVILLE

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
northern goshawk, *Accipiter gentilis* (SC)  
tricolored blackbird, *Agelaius tricolor* (SC)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 612A OXBOW BRIDGE

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

QUAD : 612 B COLD FORK

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)

QUAD : 612D LOWREY

American peregrine falcon, *Falco peregrinus anatum* (E)  
bald eagle, *Haliaeetus leucocephalus* (T)  
northern spotted owl, *Strix occidentalis caurina* (T)  
tricolored blackbird, *Agelaius tricolor* (SC)  
Bell's sage sparrow, *Amphispiza belli belli* (SC)  
western burrowing owl, *Athene cunicularia hypugea* (SC)  
white-faced ibis, *Plegadis chihi* (SC)

## Attachment E. Preliminary Bird Species Lists For Proposed Offstream Storage Locations

This attachment identifies all bird species observed at or near the four proposed reservoir locations during the current survey as well as data collected at Thomes-Newville by DFG during the early 1980s. It should be noted that the footprint of the currently proposed Thomes Newville Reservoir is substantially different than that evaluated by DFG in the early 1980s. Further, the surviving information indicates that intensive avian survey efforts were conducted somewhere within the Stony and Thomes Creek watersheds using a variety of sampling methodologies between 1980 and 1983 (DFG 1983)

Preliminary List of Bird Species Observed at the Four Proposed Offstream Storage Reservoirs						
Species	Funks	Sites	Colusa	Thomes- Newville 1983	Newville 1999	Red Bank
acorn woodpecker		X		X	X	X
American avocet	X					
American bittern	X					
American coot	X		X	X		X
American crow	X	X	X	X	X	X
American goldfinch				X		X
American kestrel	X	X	X	X	X	X
American robin		X	X	X	X	X
American white pelican	X					
American widgeon	X		X	X	X	X
Anna's hummingbird				X		
ash-throated flycatcher		X		X	X	X
band-tailed pigeon				X		X
bank swallow			X	X		
barn owl		X	X	X	X	X
barn swallow	X	X	X	X	X	X
belted kingfisher	X	X	X	X	X	X
Bewick's wren	X	X		X	X	X
black phoebe	X	X	X	X	X	X
black-chinned hummingbird		X			X	X
black-crowned night heron				X		
black-headed grosbeak		X		X		X
black-necked stilt	X			X		
black-throated gray warbler		X				
blue grosbeak		X				
blue-gray knatcatcher				X		X
blue-winged teal	X					
Brewer's blackbird	X	X	X	X	X	X
brown creeper		X		X		
brown-headed cowbird	X	X		X	X	X
bufflehead	X		X	X		

Species	Funks	Sites	Colusa	Thomes- Newville 1983	Newville 1999	Red Bank
Bullock's oriole	X	X	X	X	X	X
burrowing owl	X	X	X	X	X	
California gull	X	X				
California horned lark		X	X	X	X	X
California quail		X	X	X	X	X
California thrasher				X		
California towhee	X	X	X	X	X	X
Canada goose	X		X	X		X
canvasback	X		X			
canyon wren				X		
cedar waxwing				X		X
chipping sparrow		X		X		X
cinnamon teal	X			X	X	
Clark's grebe	X					
cliff swallow	X	X	X	X	X	X
common gallinule			X			
common goldeneye	X				X	
common loon	X					
common merganser	X	X	X	X	X	X
common raven	X	X	X	X	X	X
common snipe				X		
common yellowthroat		X	X	X		
Cooper's hawk	X	X	X	X	X	X
dark-eyed junco		X	X	X	X	X
dipper				X		
double-crested cormorant	X		X			
downy woodpecker		X		X		X
dusky flycatcher				X		
eared grebe	X					
empidonax flycatcher		X				
European starling	X	X	X	X	X	X
evening grosbeak				X		
ferruginous hawk	X	X				

Species	Funks	Sites	Colusa	Thomes- Newville 1983	Newville 1999	Red Bank
Forster's tern	X					
fox sparrow		X	X	X	X	X
gadwall	X		X			
golden eagle	X	X	X	X	X	X
golden-crowned kinglet				X		X
golden crowned sparrow	X	X	X	X	X	X
grasshopper sparrow	X		X			
great egret	X	X		X	X	
great-blue heron	X	X	X	X	X	X
great-horned owl	X	X	X	X	X	X
greater roadrunner		X		X		X
greater yellowlegs	X	X	X	X		X
green heron	X	X	X	X	X	X
green-winged teal	X		X			
hairy woodpecker		X		X	X	X
Hammond's flycatcher				X		
hermit thrush				X		X
hermit warbler				X		
hooded merganser					X	X
house finch	X	X	X	X	X	X
house sparrow	X	X	X	X	X	X
house wren				X	X	X
Hutton's vireo				X		X
killdeer	X	X	X	X	X	X
lark sparrow	X	X	X	X	X	X
Lawrence's goldfinch	X					X
lazuli bunting				X		
lesser goldfinch	X	X	X	X	X	X
lesser nighthawk	X			X		
lesser scaulp	X		X	X		
Lewis's woodpecker		X		X		X
Lincoln's sparrow				X		
loggerhead shrike	X	X	X	X	X	X



Species	Funks	Sites	Colusa	Thomes- Newville 1983	Newville 1999	Red Bank
long-billed curlew	X	X	X			
long-billed dowitcher	X		X			
long-billed marsh wren		X	X			
long-eared owl		X	X	X	X	X
MacGillivray's warbler				X		X
mallard	X	X	X	X	X	X
merlin		X		X	X	X
mountain bluebird			X	X	X	X
mountain quail					X	X
mourning dove	X	X	X	X	X	X
Nashville warbler				X		X
northern flicker	X	X	X	X	X	X
northern harrier	X	X	X	X	X	X
northern mockingbird	X	X	X	X	X	
northern pintail	X					
northern rough-winged swallow	X	X		X	X	X
northern shoveler	X		X			X
Nuttall's woodpecker		X		X	X	X
orange-crowned warbler				X		X
osprey				X		X
pied-billed grebe	X		X	X		X
pine siskin				X		
plain titmouse		X		X	X	X
poorwill				X		
prairie falcon	X	X	X	X	X	X
purple finch	X	X	X	X	X	X
red-breasted sapsucker				X		
red-shouldered hawk		X		X		
red-tailed hawk	X	X	X	X	X	X
red-winged blackbird	X	X	X	X	X	X
ring-necked duck	X	X	X	X	X	X
ring-necked pheasant	X	X	X	X	X	
rock dove	X	X	X	X		X

Species	Funks	Sites	Colusa	Thomes- Newville 1983	Newville 1999	Red Bank
rock wren	X	X	X	X	X	X
rough-legged hawk	X	X		X		
ruby-crowned kinglet	X	X	X	X	X	X
ruddy duck	X		X	X		
rufous hummingbird				X		
rufous-crowned sparrow	X		X	X		
rufous-sided towhee	X	X	X	X	X	X
sage sparrow				X		
sandhill crane			X			
savannah sparrow	X	X	X	X	X	X
Say's phoebe	X	X	X	X	X	X
sharp-shinned hawk	X	X	X	X		X
short-eared owl	X					
snowy egret	X	X	X			X
solitary sandpiper	X			X		X
solitary vireo				X		
song sparrow	X	X		X		X
southern bald eagle	X	X	X	X	X	X
spotted sandpiper	X			X		X
Swainson's hawk				X		
Swainson's thrush				X		X
Townsend's solitaire				X		X
Townsend's warbler				X		
tree swallow				X	X	X
tri-colored blackbird		X	X	X	X	
tundra swan	X					
turkey vulture	X	X	X	X	X	X
varied thrush				X		X
Vaux's swift				X		
violet-green swallow		X	X	X	X	X
warbling vireo				X		
water pipet		X		X		
western bluebird	X	X		X	X	X

Species	Funks	Sites	Colusa	Thomes- Newville 1983	Newville 1999	Red Bank
western flycatcher				X		
western grebe	X					
western kingbird	X	X	X	X	X	X
western meadowlark	X	X	X	X	X	X
western phalarope	X					
western screech owl		X		X		X
western scrub jay		X		X	X	X
western tanager		X		X		X
western wood peewee				X		
white-breasted nuthatch		X		X	X	X
white-crowned sparrow	X	X	X	X	X	X
white-tailed kite	X	X		X		
white-throated swift				X		
wild turkey					X	X
willow flycatcher				X		
Wilson's warbler		X	X	X		Xw
wood duck	X	X	X			X
wrentit				X		X
yellow warbler		X		X		
yellow-bellied sapsucker					X	X
yellow-billed magpie	X	X	X	X	X	X
yellow-breasted chat				X		
yellow-headed blackbird				X		
yellow-rumped warbler				X	X	X

# Attachment F. State and Federally Listed Species Densities Tabulated By Reservoir Location

This attachment identifies seasonal densities of State and federally listed species by reservoir

Sites Reservoir Avian Transect Results (density in birds per square mile)					
	Number of		Season		
Species	Individuals	Summer	Fall	Winter	Spring
burrowing owl	5	0.24	0.05		
California horned lark	84	4.83	1.58	2.90	6.57
Cooper's hawk	4		0.03		0.06
ferruginous hawk.	2			0.12	
golden eagle	58	0.23	0.20	0.26	0.32
lark sparrow	29	NS	NS	0.47	1.46
loggerhead shrike	67	0.93	1.60	1.17	0.46
long-billed curlew	1050			14.58	1.25
northern harrier	90	0.05	0.50	1.52	0.58
sharp-shinned hawk	5		0.40		0.03
southern bald eagle	5			0.07	
tri-colored blackbird	92				5.38
white-tailed kite	3	0.12			0.12
miles of transect/season		37.5	88.0	75.0	150.5

NS=Not Sampled

Newville Reservoir Avian Transect Results (density in birds per square mile)					
	Number of		Season		
Species	Individuals	Summer	Fall	Winter	Spring
California horned lark	8	NS	NS	0.52	0.75
Cooper's hawk	1	NS	NS	0.17	
golden eagle	8	NS	NS	0.10	0.13
lark sparrow	55	NS	NS	7.64	1.50
loggerhead shrike	25	NS	NS	2.05	0.90
merlin	1	NS	NS	0.04	
northern harrier	7	NS	NS	0.15	0.06
prairie falcon	5	NS	NS	0.05	0.12
southern bald eagle	4	NS	NS	0.08	
tri-colored blackbird	20	NS	NS	0.69	2.41
miles of transect/season		0.0	0.0	58.5	58.5

NS=Not Sampled

Funks Reservoir Avian Transect Results (density in birds per square mile)					
Species	Number of		Season		
	Individuals	Summer	Fall	Winter	Spring
American bittern	1	0.84			
American white pelican	4		0.16	0.10	
California gull	22		0.32	1.84	0.43
common loon	1				0.21
Cooper's hawk	1		0.48		
double-crested cormorant	40	0.37	1.43	1.11	0.33
golden eagle	3			0.13	0.05
lark sparrow	20	NS	NS	8.18	
loggerhead shrike	17		1.43	0.49	1.07
long-billed curlew	132		4.20	17.73	
northern harrier	33		0.53	3.89	0.75
prairie falcon	1		0.09		
sharp-shinned hawk	2			0.48	
short-eared owl	1				0.43
southern bald eagle	13			0.82	0.21
white-tailed kite	14			1.14	0.14
miles of transect/season		6.0	21.5	18.0	20.5

NS=Not Sampled

Colusa Reservoir Avian Transect Results (density in birds per square mile)					
Species	Number of Individuals	Season			
		Summer	Fall	Winter	Spring
bank swallow	1	0.14			
burrowing owl	2		0.14		0.03
California horned lark	679	85.00	7.38	22.63	36.66
Cooper's hawk	2		0.14	0.27	
double-crested cormorant	1				0.10
golden eagle	26	0.22	0.32	0.24	0.30
sandhill crane	5		0.67		
lark sparrow	8	NS	NS		0.80
loggerhead shrike	71	0.89	2.15	1.84	2.82
long-billed curlew	149				4.53
northern harrier	64	1.00	0.67	0.87	0.50
prairie falcon	1		0.14		
sandhill crane	5		0.67		
sharp-shinned hawk	1		0.14		0.03
southern bald eagle	4		0.04	0.03	0.10
tri-colored blackbird	293	41.5			20.3
miles of transect /season		20.0	74.5	38.0	87.5

NS=Not Sampled



Red Bank Project Avian Transect Results (density in birds per square mile)					
Species	Number of Individuals	Season			
		Summer	Fall	Winter	Spring
Cooper's hawk	8		0.67	0.16	0.26
golden eagle	37	0.09	0.25	0.30	0.32
lark sparrow	38	NS	NS	0.18	4.78
Lawrence's goldfinch	8			0.36	0.77
merlin	1				0.07
northern harrier	7		0.08	1.06	0.26
osprey	1				0.13
prairie falcon	1				0.13
sharp-shinned hawk	6		0.19	0.40	0.06
southern bald eagle	7		0.11	0.05	0.26
miles of transect/season		25.5	53.0	55.0	68.0

NS=Not Sampled

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